Appendix B: Core Component Modeling Approach

1. General Approach

This appendix provides an overview of the modeling methodology used to develop FSA's Core Component Dictionaries. Additional detail on identifying and modeling XML Core Components is included in the documents referenced by this initiative. The full list of documents is included in Appendix A: References. The primary references for modeling the initial set of Core Components include the following documents:

- ebXML Core Components Technical Specification v1.90 (UN/CEFACT and OASIS)
- Core Components User's Guide 16 June 2003 (UN/CEFACT)
- UBL 0pt70 review release (UBL / OASIS)
- UBL Library Release (includes BIE spreadsheets and sample schemas) (UBL / OASIS)
- UBL White paper on Naming and Design Rules (UBL / OASIS)
- ebXML Registry Information Model v2.5 (OASIS)
- ebXML Registry Services Specification v2.5 (OASIS)

Core Component Representations
The Core Components have been modeled using the ebXML/UBL Core Component spreadsheets and as XML diagrams. These two methods capture the functional and technical representations of the Core Components.

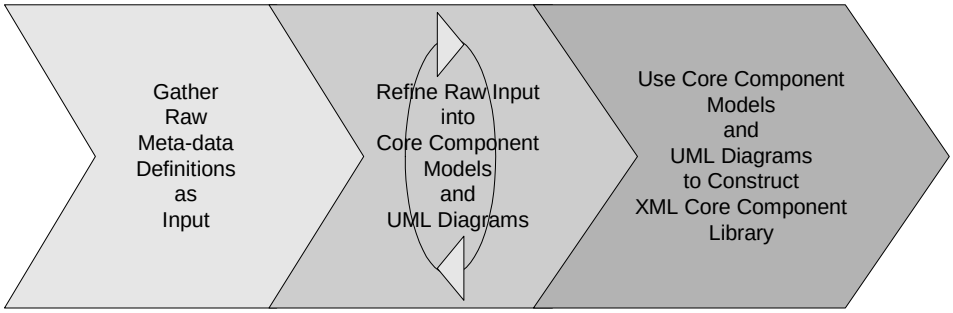
Functional Representation of Core Components
The Core Components, in their basic representations, were captured in a detailed grid. In other words, the basic discovery and analysis of Core Components was a technology-independent (i.e., database- and XML-independent) activity. There were several reasons for this:

1. It eliminated the burden on functional people to learn a specific technology in order to communicate their ideas.
2. It decoupled the functional analysis and documentation of the data from any technical implementation.
3. It positioned the analysis work better for future implementations that are based on Core Components, such as importing the model into Data Reconciliation tools.

XML Representation of Core Components
Once the functional analysis was completed, the Core Components were then defined as XML Schema entities. Eventually, these XML schema fragments will be stored in the FSA XML Registry and Repository. However, these XML definitions were a direct output of the functional work described above, and were dependent on the functional work done in the Core Component spreadsheets.

2. Core Component High-level Processes

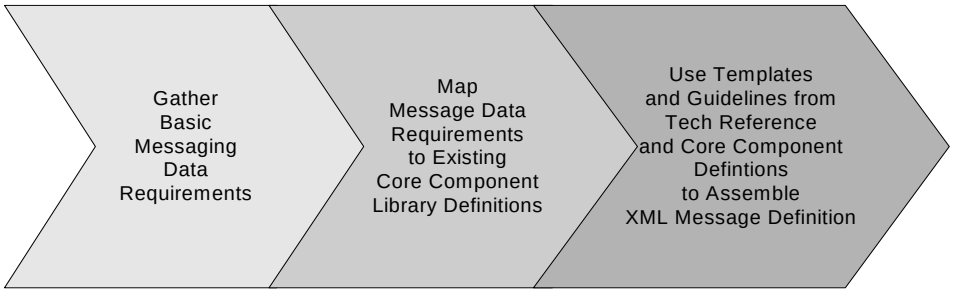
High Level Process for Core Component Assembly
The following diagram depicts the high level flow for Core Component analysis.



Core Components and the Technical Reference Manual
The Core Components Definitions work hand-in-hand with the Technical Reference and Usage Guidelines manual to provide the following tools for groups that need to assemble their own message format as an XML Schema Definition:

1. Data definitions
2. Templates
3. Assembly guidelines

High Level Process for Core Component Usage
The following diagram depicts the high level flow for using the Core Components, and the Technical Reference / Usage Guidelines to construct an XML message specification.



3. Core Component Analysis Discovery Process

The following diagram illustrates the four steps that were followed to identify the core components.

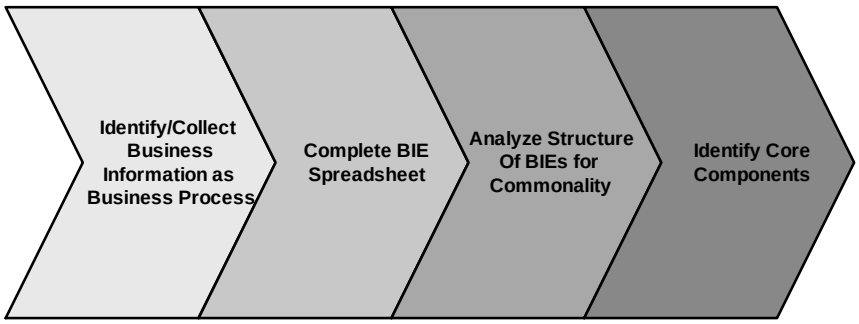


Figure 1 Core Component Discovery Process

Steps

a) Identify/collect business information in the context of the business process.

b) Complete Business Information Entity (BIE) Discovery spreadsheet.
The BIE Discovery process is intended to allow a businessperson with limited XML knowledge to document business information in a hierarchical manner. BIE definition will facilitate finding a corresponding predefined core component from the dictionary.

- The BIE Discovery spreadsheet documents each BIE with its object class, property term, representation term, and each term's respective qualifier.

- Business knowledge is identified and each piece of data is categorized as:
  - Aggregate Business Information Entity (ABIE)
  - Basic Business Information Entity (BBIE)
  - Association Business Information Entity (ASBIE)

c) Create XML representation.

- Assembling the business information entities into XML representations creates a visual representation of the business process with its associated information and interrelationships.

d) Identify Core Component based on the Business Information Entity.

- Business Information Entities are Core Components with specific business context

Representation	Business Information Entity	Core Component
Object Class	Aggregate BIE (ABIE)	Aggregate Core Component (ACC)
Object Class Properties	Basic BIE (BBIE)	Basic Core Component (BCC)
Object Class is the (complex) property of another Object Class	Association BIE (ASBIE)	Association Core Component (ASCC)

- Core Components are valid in all contexts, whereas Business Information Entities, being derived from Core Components, have particular context.